

Summary of Cancer Incidence and Mortality in Zip Code 29146 (Springfield, SC)

Cancer Incidence in Zip Code 29146

The first step in the analysis of cancer data for zip code 29146 was to look at the number of new cancer cases diagnosed in the zip code and compare this to the number of cancer cases expected (see Table 1). This first step determines if there is anything unusual with cancer patterns in the area. The number of "expected" cancer cases is calculated by using South Carolina cancer rates and applying them to the population of the zip code.

Table 1 shows what types of cancer occurred in zip code 29146 from 1996-1999, and how many cancer cases were expected. Overall, there were more cases of cancer than expected. A total of 46 new cases of cancer occurred in the zip code, while 41 cases were expected. However, the difference between the observed number and expected number was not statistically significant. The most common types of cancer were prostate, lung, and female breast cancers. These three types of cancer are also the most common cancers occurring across all of South Carolina.

The analysis did not reveal any specific types of cancer where the number of cases occurring was significantly higher than expected.

Because zip code 29146 is a small zip code, the number of cases occurring in other cancer sites was very small. We must use caution when analyzing small numbers. As a general rule, a cancer site with 5 or more expected cases will be analyzed; below that the numbers are considered too small to be reliable. The remaining cancer cases that occurred in zip code 29146 occurred in sites where fewer than 5 cases of cancer were expected. Therefore, these sites were not analyzed and were excluded from Table 1.

Cancer Deaths in Zip Code 29146

To assess cancer deaths in this zip code, cancer mortality data from 1996-2000 were used. This is the most current death data available. The same process used to analyze new cancer cases was also used to analyze cancer deaths. Table 2 shows the number of cancer deaths that occurred and the number expected in the zip code. A total of 27 cancer deaths occurred in this zip code, while 25 deaths were expected. Therefore, more cancer deaths occurred than expected, but the difference between the observed and expected numbers was not statistically significant.

Lung cancer is the only cancer listed in Table 2. Other types of cancer death did occur; however, these cancer deaths occurred in sites where fewer than 5 cancer deaths were expected. Therefore, these sites were not analyzed and were excluded from Table 2.

Conclusions

To summarize, more cancer cases and deaths occurred in zip code 29146 than expected; however, the difference between the observed and expected numbers was not statistically significant.

In order for a true cancer cluster to exist, the number of cancers occurring must be more than would be expected by chance. Along with statistical testing, there are several other criteria that determine whether a true cancer cluster exists. First, a cancer cluster would more likely involve rarer types of cancer, like brain, rather than more common cancers, like lung or prostate. Also, a cancer cluster would occur with one specific type of cancer rather than having excesses in several different types of cancer.

Taking all these criteria into consideration, there is no evidence of cancer clustering or of cancers resulting from environmental exposures in zip code 29146.

For questions about this report, please contact Laura Sanders at the SC Central Cancer Registry.

Report provided by:

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Information on cancer incidence provided by the SC Central Cancer Registry, Office of Public Health Statistics and Information Services, SC Dept. of Health and Environmental Control.

Information on cancer mortality provided by the Division of Vital Records and the Division of Biostatistics, SC Dept. of Health and Environmental Control.

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Table 1. Analysis of New Cancer Cases in Zip Code 29146, 1996-1999

<u>Cancer Site</u>	<u>Observed No. of Cases</u>	<u>Expected No. of Cases</u>	<u>Observed/Expected</u>	<u>Chi-SquareTest*</u>
Prostate	6	6.9	0.87	0.12
Lung/Bronchus	9	6.5	1.39	0.98
Breast (Female)	5	6.0	0.84	0.16
All Sites	46	40.6	1.13	0.71

Excludes in situ cases of cancer to allow for comparison.

Excludes cancer sites with less than 5 cases of cancer expected due to the unreliability of statistical tests based on small numbers.

Table 2. Analysis of Cancer Deaths in Zip Code 29146, 1996-2000

<u>Cancer Site</u>	<u>Observed No. of Deaths</u>	<u>Expected No. of Deaths</u>	<u>Observed/Expected</u>	<u>Chi-SquareTest*</u>
Lung/Bronchus	11	7.1	1.54	2.09
All Sites	27	24.8	1.09	0.19

Excludes cancer sites with less than 5 cancer deaths expected due to the unreliability of statistical tests based on small numbers.

*The Chi-Square statistical test allows us to determine if the difference between what is observed and what is expected is significant. If the value is greater than 3.84, then we are 95% confident that the observed number of cases or deaths is significantly different from the expected number of cases or deaths.

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